



## ALKAGEN® AQ SOLUTION PROVIDES POINT SOURCE ODOR AND CORROSION CONTROL IN FLORIDA

Experiencing severe wet-well corrosion and odor complaints at a prominent lift station, a municipality in South Florida turned to Evoqua to provide an effective solution.

Evoqua Water Technologies LLC was contacted by a South Florida Municipality to provide an odor control solution for a lift station within their collection system. In the past, the municipality had implemented biofiltration for control of atmospheric hydrogen sulfide. However, in recent years the biofilter was removed, leaving the lift station untreated and exposed to high sulfide concentrations. As a result, the lift station was subjected to a substantial degree of corrosion as well as odor complaints from the surrounding neighborhood.

The lift station handled an average daily wastewater flow of 0.5 MGD. Liquid sampling at the site showed an average hydrogen sulfide concentration of 6 mg/L. Atmospheric hydrogen sulfide data revealed that the lift station was experiencing an average sulfide concentration of 187 ppm, with peaks up to 324 ppm.

### ALKAGEN® AQ SOLUTION - PH SHIFT TECHNOLOGY

Due to the high sulfide concentrations and resulting corrosion issues, Evoqua determined a liquid phase technology was necessary to effectively reduce hydrogen sulfide concentrations. Point source application was also an important factor in selecting the right technology for a fast-acting solution.

Alkagen® AQ Solution, which uses a pH shift technology, was recommended as the optimal solution for providing point source sulfide reduction within the lift station. As pH increases, hydrogen sulfide will shift into a non-volatile form that is unable to escape into the vapor phase. For typical wastewater (pH ~7.0), nearly 50% of hydrogen sulfide exists in this non-volatile form. However, at a pH of 8.5, more than 97% of the sulfide will be trapped in solution. Alkagen AQ Solution increases wastewater pH as needed to effectively trap hydrogen sulfide in solution and prevent escape into the vapor phase.

Alkagen AQ Solution is fast-acting and rapidly dissolves in wastewater, providing an almost instantaneous effect at the application point. This contrasts to magnesium hydroxide, which has to be added upstream to allow time for dissolution, sometimes requiring multiple feed sites.



Alkagen AQ Solution provides fast-acting sulfide control

### ADVANCED DOSING AND REMOTE MONITORING - VERSADOSE® CONTROLLER AND VAPORLINK® MONITOR

With the Alkagen AQ system, a VersaDose® Dose-to-Demand advanced controller was used to carefully regulate the metering of chemicals by programming daily dose curves to match sewage flow rates within the system. By using the VersaDose Controller, Evoqua was able to maintain the desired pH set by the treatment objectives and prevent over-feeding and wasteful spending by the municipality.

Additionally, Evoqua deployed a VaporLink® remote monitoring device to continuously monitor sulfide concentrations within the wet-well. This capability allowed remote access to site specific data from any location with an internet connection. The VaporLink monitor and VersaDose controller were made accessible through Link2Site® Web Monitoring and Control system for real-time visibility and control. These technologies allowed for quick and efficient remote optimization of dosing to effectively reduce hydrogen sulfide.

## RAPID AND EFFECTIVE SULFIDE CONTROL

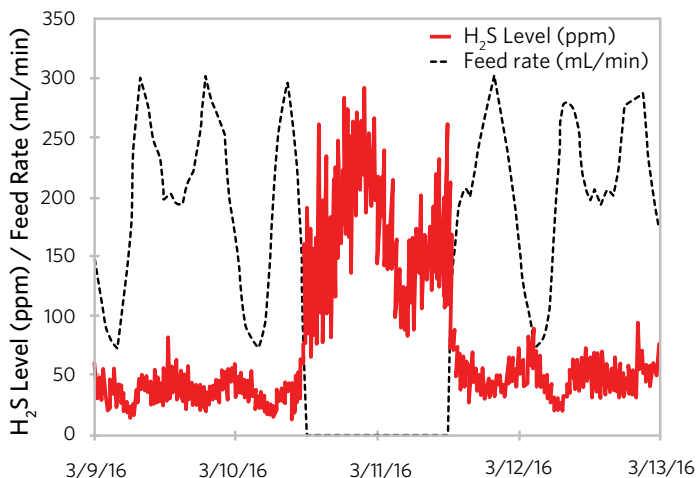
Evoqua fed Alkagen® AQ Solution directly into the influent manhole to provide instantaneous odor control within the wet-well. The municipality established treatment objectives of  $\leq 50.0$  ppm atmospheric sulfide and 8.5 wastewater pH.

Following installation and start-up, Evoqua optimized the Alkagen AQ feed system to meet the treatment objectives. The final adjusted feed rate was approximately 77 GPD. At this feed rate, hydrogen sulfide levels within the wet-well averaged 48.9 ppm while wastewater pH was maintained to an average of 8.45.

In order to demonstrate the effectiveness and rapid response of Alkagen AQ Solution, the feed system was temporarily shut off for 24 hours as seen in the chart below. Upon shutting off the system, hydrogen sulfide almost immediately returned to the untreated levels previously measured. Once the system was restarted, hydrogen sulfide concentrations promptly returned to the desired treatment levels.

With the treatment objectives being met, and the provided technology thoroughly proven, the municipality was confident in their decision to use Alkagen AQ Solution for odor and corrosion control at the lift station.

## ATMOSPHERIC HYDROGEN SULFIDE LEVELS WITH FEED RATE



When the Alkagen AQ feed system was temporarily shut off, hydrogen sulfide levels spiked, demonstrating the effectiveness of the solution.

### INDUSTRY:

Municipal Wastewater

### BUSINESS CHALLENGE:

Effectively control hydrogen sulfide to eliminate odor complaints and reduce corrosion

### SOLUTIONS/SERVICES:

- Alkagen AQ Solution
- VersaDose Dosing Controller
- VaporLink Hydrogen Sulfide Monitor
- Link2Site Web Monitoring and Control

### ALKAGEN® SOLUTION ADVANTAGES:

- Fast-acting sulfide control
- Achieves pH of 9+
- Treats odor and corrosion at the source

### FOR MORE INFORMATION

[www.evoqua.com/alkagen](http://www.evoqua.com/alkagen)

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Video Links

Odor and Corrosion Control in Sarasota County

Evoqua video - Making Water Safer

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